REMARKS

Applicant notes that the Examiner has allowed claims 34-40, and thus, further consideration with respect to these claims is considered moot. Applicant respectfully traverses the rejection of claim 1 under 35 U.S.C. §103(a) as being unpatentable over Wright.

The present invention relates to an adaptive antenna-matching network for wireless communications devices. Conventional antenna tuning units (ATU) typically initiate an antenna tuning procedure only after a change in operating frequency. During the tuning phase, the ATU searches for the lowest Voltage Standing Wave Ratio (VSWR), and tunes the antenna to the transmitter accordingly. However, once tuned, conventional ATUs will not re-tune the antenna to the transmitter until the next change in frequency. Thus, conventional ATUs do not consider impedance mismatches that may occur between the antenna and the transmitter while the transmitter operates at the selected frequency. The present invention solves this problem with a low-cost adaptive antenna-matching network that quasi-continuously re-tunes the antenna to the transmitter while the transmitter is operating at the selected frequency.

The Examiner contends that the patent to Wright discloses "an adjustable matching network selectively connecting the antenna to a select one of a third plurality of transmit power amplifiers corresponding to the first plurality of transmit frequency bands for signal transmission, the adjustable matching network matching an impedance of the antenna to the select one transmit power amplifier." However, this assertion is incorrect. The patent to Wright is directed to automatically adjusting the power level of a power amplifier responsive to an impedance mismatch, not adjusting an impedance matching network to tune an antenna responsive to an impedance mismatch (see Wright, col. 2, ll. 60-65). Specifically, Wright teaches measuring the VSWR load on a transmitter and controlling the output power of the power amplifier responsive to the measured VSWR. As the VSWR increases, the output power of the power amplifier is reduced (see Wright, col. 4, ln. 33 – col. 5, ln. 9). While this equalizes response across the entire range of a multi-channel transmitter, it does nothing to minimize or correct an impedance

mismatch on any channel. Instead of re-tuning the antenna responsive to a detected impedance mismatch, the device of Wright merely *compensates* for the impedance mismatch by reducing output power. Indeed, the impedance mismatch remains in Wright even after the power output is adjusted. Therefore, Wright fails to teach or suggest "an adjustable matching network...matching an impedance of the antenna to the select one transmit power amplifier," and thus, the §103 rejection must fail. Accordingly, Applicant respectfully requests the allowance of claims 1-33.

Applicant also adds new claims 41-63. Claim 41 requires "automatically adjusting a variable impedance matching network in the wireless communications device during an idle period of communications to minimize [an] impedance mismatch at the selected frequency band." Claims 52 and 63 contain similar language. For the reasons stated above, Wright fails to teach or suggest adjusting a variable impedance matching network to minimize an impedance mismatch while the device operates at the selected frequency band, and further, fails to teach or suggest adjusting the impedance matching network during an idle period of communications (e.g., during an idle slot in a TDMA frame). Accordingly, Applicant respectfully requests the allowance of claims 41-63.

Respectfully submitted,

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